Solid Bevel Cutter resharpening

A12-510

Solid bevel cutters are used for mass bevel gear production in milling process.
The cutter could be made out of solid blank or it could be composite tool, made out of carier plate and sticked blades.
Due to their form, reminding a crown, these tools are also known as crown cutters.
Solid bevel cutters are sharpened using a corresponding cup wheel.
The given example is a solid bevel cutter with Ø115mm, 24 alternate teeth and 12mm cutting depth.

1. Cycletime for Production

Tool specifications Diameter 115 mm, Z 24, Length of cutting edge 12 mm Material HSS					
Operations	Probe	Dress	Sharpen	Outside Bl	Inside Bl
Feed [mm/Min]	2000	400	125	250	250
Infeed / pass [mm]		0.005		0.050	0.050
Wheel speed [m/s]		33	33	33	33
Used wheels		6A2	6A2	6A2	6A2
Grinding time [s]	60	60	35	600	600
Total cycle time	~ 22 min				

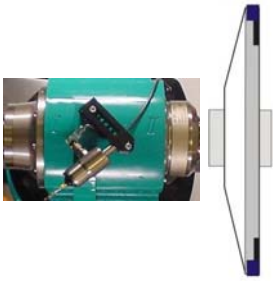
Outside blade and Inside blade sharpening can be done in one shot or separately

Total material removal = 4x0.05mm = 0.2mm

The mentioned cycle times are indicative. The material to be ground, different grinding wheels or other coolants can influence the cycle times considerably.

2. Used Grinding Wheels

6A2 / 12C9 90° CBN Ø100 B91



3. Machine and Software Requirements

Machines:	5 axes CNC grinder: Corvus GDS / Gemini DMR / Norma CFG
Control:	Fanuc 31i
Coolant:	Synthetic Oil, pressure 6 bar
Software:	Quinto 5

responsible engineer: SIW, 08.2010

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